IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Alan C. Berkema et al.	Examiner:	Peter Poltorak
Serial No.:	09/897,656	Group Art Unit:	2134
Filed:	June 29, 2001	Docket No.:	10016784-1
Title:	PORTABLE WIRELESS DEVICE AND SOFTWARE FOR PRINTING BY REFERENCE		

DECLARATION OF PRIOR INVENTION UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir/Madam:

This Declaration is submitted to establish prior invention of the subject matter of the present patent application. The persons making this Declaration are the inventors, Alan C. Berkema, Jeff Morgan, Pat Stoltz, and Todd Fischer.

Accompanying this Declaration are Exhibits A through E to establish conception of the subject matter of the present patent application in the United States prior to the earliest effective date of May 21, 2001 of the Nordman U.S. Patent Application Publication No. 2002/0174364 coupled with due diligence from a date prior to the earliest effective date of the Nordman Publication up to the filing date of the present patent application (i.e., constructive reduction to practice).

Declaration under 37 C.F.R. § 1.131
Applicant: Alan C. Berkema et al.
Serial No.: 09/897,656
Filed: June 29, 2001
Docket No.: 10016784-1
Title: PORTABLE WIRELESS DEVICE AND SOFTWARE FOR PRINTING BY REFERENCE

Exhibit A (33 pages) includes an HP Invention Disclosure prepared and submitted by inventors, Alan C. Berkema, Jeff Morgan, and Pat Stoltz, on May 1, 2001. This invention disclosure entitled "Portable Wireless Device and Device Software for Printing by Reference" describes subject matter of the present patent application, and was assigned HP Patent Disclosure Number ("PDNO") 10016784.

Exhibit B (1 page) includes an email dated May 16, 2001 from HP Patent Agent Dave Mason to inventor Alan C. Berkema providing a list of titles and associated HP ID numbers for patent applications to be prepared based on invention disclosures 10016066 ("Print By Reference") and 10016067 ("Printer Service Interface"). Included in this list is invention disclosure 10016784-1 ("Portable Wireless Device And Device Software For Printing By Reference") (i.e., the present patent application).

Exhibit C (1 page) includes a copy of a letter dated May 17, 2001 from HP Patent Agent David M. Mason to patent attorney Roger D. Greer of Greer, Burns & Crain requesting a quote of the cost to prepare a US patent application based on HP Invention Disclosure No. 10016784-1 (i.e., the present patent application).

Exhibit D (1 page) includes a Request for Quote and Engagement Letter Agreement for the preparation of a US patent application based on HP Docket No. 10016784 (i.e., the present patent application). The agreement was signed by patent attorney Roger D. Greer of Greer, Burns & Crain on May 21, 2001 and by HP Patent Agent David M. Mason on May 22, 2001.

Exhibit E (3 pages) includes an email string including a final email dated June 22, 2001 from patent attorney Steven P. Fallon of Greer, Burns & Crain to inventors Alan C. Berkema and Jeff Morgan forwarding a draft application based on related invention disclosure HP 10016067-1. The email also provides a list of the applications being prepared for the inventors. Included in this list is invention disclosure 10016784-1 ("Portable Wireless Device And Device Software For Printing By Reference") (i.e., the present patent application).

During the period between May 17, 2001 and June 29, 2001, the patent application for invention disclosure 10016784-1 (i.e., the present patent application) was prepared, and on June 29, 2001 the patent application for invention disclosure 10016784-1 (i.e., the present patent application) was filed.

Declaration under 37 C.F.R. § 1.131
Applicant: Alan C. Berkema et al.
Serial No.: 09/897,656
Filed: June 29, 2001
Docket No.: 10016784-1
Title: PORTABLE WIRELESS DEVICE AND SOFTWARE FOR PRINTING BY REFERENCE

From these exhibits, it can be seen that the subject matter of the present patent application was conceived in the United States prior to the earliest effective date of May 21, 2001 of the Nordman U.S. Patent Application Publication No. 2002/0174364 coupled with due diligence from a date prior to the earliest effective date of the Nordman Publication up to the filing date of the present patent application (i.e., constructive reduction to practice).

As a person signing below, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: _Al C Berkema_ Date: _12/13/2006_
Alan C. Berkema

Name: _____ Date: _____
Jeff Morgan

Name: _____ Date: _____
Pat Stoltz

Name: _____ Date: _____
Todd Fischer

Declaration under 37 C.F.R. § 1.131
Applicant: Alan C. Berkema et al.
Serial No.: 09/897,656
Filed: June 29, 2001
Docket No.: 10016784-1
Title: PORTABLE WIRELESS DEVICE AND SOFTWARE FOR PRINTING BY REFERENCE

From these exhibits, it can be seen that the subject matter of the present patent application was conceived in the United States prior to the earliest effective date of May 21, 2001 of the Nordman U.S. Patent Application Publication No. 2002/0174364 coupled with due diligence from a date prior to the earliest effective date of the Nordman Publication up to the filing date of the present patent application (i.e., constructive reduction to practice).

As a person signing below, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: _____   Date:_____
      Alan C. Berkema

Name: _____   Date: Dec 13th 2006
      Jeff Morgan

Name: _____   Date:_____
      Pat Stoltz

Name: _____   Date:_____
      Todd Fischer

Declaration under 37 C.F.R. § 1.131
Applicant: Alan C. Berkema et al.
Serial No.: 09/897,656
Filed: June 29, 2001
Docket No.: 10016784-1
Title: PORTABLE WIRELESS DEVICE AND SOFTWARE FOR PRINTING BY REFERENCE

From these exhibits, it can be seen that the subject matter of the present patent application was conceived in the United States prior to the earliest effective date of May 21, 2001 of the Nordman U.S. Patent Application Publication No. 2002/0174364 coupled with due diligence from a date prior to the earliest effective date of the Nordman Publication up to the filing date of the present patent application (i.e., constructive reduction to practice).

As a person signing below, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: _____   Date:_____
     Alan C. Berkema

Name: _____   Date:_____
     Jeff Morgan

Name: _*Pat Stoltz (signature)*_   Date: _Dec. 14, 2006_
     Pat Stoltz

Name: _____   Date:_____
     Todd Fischer

Declaration under 37 C.F.R. § 1.131
Applicant: Alan C. Berkema et al.
Serial No.: 09/897,656
Filed: June 29, 2001
Docket No.: 10016784-1
Title: PORTABLE WIRELESS DEVICE AND SOFTWARE FOR PRINTING BY REFERENCE

From these exhibits, it can be seen that the subject matter of the present patent application was conceived in the United States prior to the earliest effective date of May 21, 2001 of the Nordman U.S. Patent Application Publication No. 2002/0174364 coupled with due diligence from a date prior to the earliest effective date of the Nordman Publication up to the filing date of the present patent application (i.e., constructive reduction to practice).

As a person signing below, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name: _____   Date: _____
    Alan C. Berkema

Name: _____   Date: _____
    Jeff Morgan

Name: _____   Date: _____
    Pat Stoltz

Name: _[signature]_   Date: Dec 11, 2006
    Todd Fischer

HEWLETT PACKARD   **INVENTION DISCLOSURE**   PAGE

ONE OF ____

PDNO 10016784   DATE RCVD 5.1.2001

ATTORNEY Dmm - 11 PS ROSEV

Instructions: The information contained in this document is COMPANY CONFIDENTIAL and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.

Descriptive Title of Invention:
PORTABLE WIRELESS DEVICE AND DEVICE SOFTWARE FOR Printing By Reference

Name of Project:

Product Name or Number:

Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s): Submitted to the Bluetooth Printer Working Group and Associate Members on November 22 2000.

Was a product including the invention announced, offered for sale, sold, or is such activity proposed? If so, the date(s) and location(s): June 2001

Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s): No
If any of the above situations will occur within 3 months, call your IP attorney or the Legal Department now at 1-857-2542 or 415-857-2542

Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.)

Was the invention built or tested? If so, the date:

Was this invention made under a government contract? If so, the agency and contract number: No.

Description of Invention: *Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).*
A.   Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).
B.   Problems solved by the invention.
C.   Advantages of the invention over what has been done before.
D.   Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)

Signature of Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [1999].

Employee No. Name	Signature	Telnet	Mailstop
Entity & Lab Name			
358399 Alan Berkema		785-5605	5558
D366-6540 NPSD			
11PS			
Employee No. Name	Signature	Telnet	Mailstop
Entity & Lab Name			
Employee No. Name	Signature	Telnet	Mailstop
Entity & Lab Name			
Employee No. Name	Signature	Telnet	Mailstop
Entity & Lab Name			

Employee No.	Name		Signature		Telnet	Mailstop
	Entity & Lab Name					

Employee No.	Name		Signature		Telnet	Mailstop
	Entity & Lab Name					

(If more than six inventors, include additional information on another copy of this form and attach to this document)

| **HEWLETT PACKARD** **INVENTION DISCLOSURE** | COMPANY CONFIDENTIAL | PAGE |
| OF | | |

Signature of Witness(es): *(Please try to obtain the signature of the person(s) to whom invention was first disclosed.)*

The invention was first explained to, and understood by, me (us) on this date: [   ]

| Full Name | Signature | Date of |
| Signature | | |

| Full Name | Signature | Date of |
| Signature | | |

Inventor & Home Address Information: *(If more than four inventors, include addl. information on a copy of this form & attach to this document)*

Inventor's Full Name
Alan Chris Berkema

Street
8803 Quartzite Circle

City		State
Zip		
Granite Bay		California
95746		

| Do you have a Residential P.O. Address? P.O. BOX | City | State |
| Zip | | |

Greeted as *(nickname, middle name, etc.)*   Alan   Citizenship USA

Inventor & Home Address Information: *(If more than four inventors, include addl. information on a copy of this form & attach to this document)*

Inventor's Full Name
Jeff Morgan

Street

| City | | State |
| Zip | | |

| Do you have a Residential P.O. Address? P.O. BOX | City | State |
| Zip | | |

Greeted as *(nickname, middle name, etc.)*   Jeff   Citizenship

---

Inventor & Home Address Information: *(If more than four inventors, include addl. information on a copy of this form & attach to this document)*

Inventor's Full Name
Pat Stoltz

Street

| City | | State |
| Zip | | |

| Do you have a Residential P.O. Address? P.O. BOX | City | State |
| Zip | | |

Greeted as *(nickname, middle name, etc.)* Alan	Citizenship

Additional documentation

Invention description

This invention provides a mechanism to.........

Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).

Problems solved by the invention

Advantages of the invention over what has been done before

Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)

Abstract:
This document is a specification of the print-by-reference Print Service Interface. The Print Service Interface is the interface between the Printer and the Print Service. The Printer accesses the Print Service, via the Print Service Interface, when the Printer is carrying out a print-by-reference request. The Printer uses the Print Service to resolve and access the information to be printed. An extension to the Print Service Interface allows another device, like a mobile appliance, to provide a reference and a target Printer to the Print Service. HTTP based communication is used between the Printer and the Print Service.

Introduction

The purpose of this document is to provide a specification of the Print By Reference Print Service Interface. This document should be read in conjunction with a document specifying a Print By Reference solution, such as the Bluetooth Printing Profile [BPP].

Throughout this document the Print Service is described from the Printer's point of view, as seen through the Print Service Interface. The Print Service may support other interfaces. The Print Service may also be a confederation of components all working together to provide the Print Service functionality. This specification does not limit the design or implementation of a Print Service beyond specifying the interface used by the Printer. The term client is used for a device which uses the Print Service, such as a Printer, Sender or other e-service.

Scope

PBR is a print specific use of the more general Service by Reference model. The philosophy and guidelines supporting Service by Reference have been used in defining the Print Service Interface Jeff Morgan to describe this in general. For instance all SBR support three common methods in the API.

Figure 1 shows an example architecture that supports the Print By Reference model. Figure 1 is from the Bluetooth Printing Profile specification [BPP]. The B interface in Figure 1 is the primary scope of this document. This document will also specify extensions to the Print Service Interface to support the C interface. The other interfaces listed in Figure 1 are out of scope for this document.
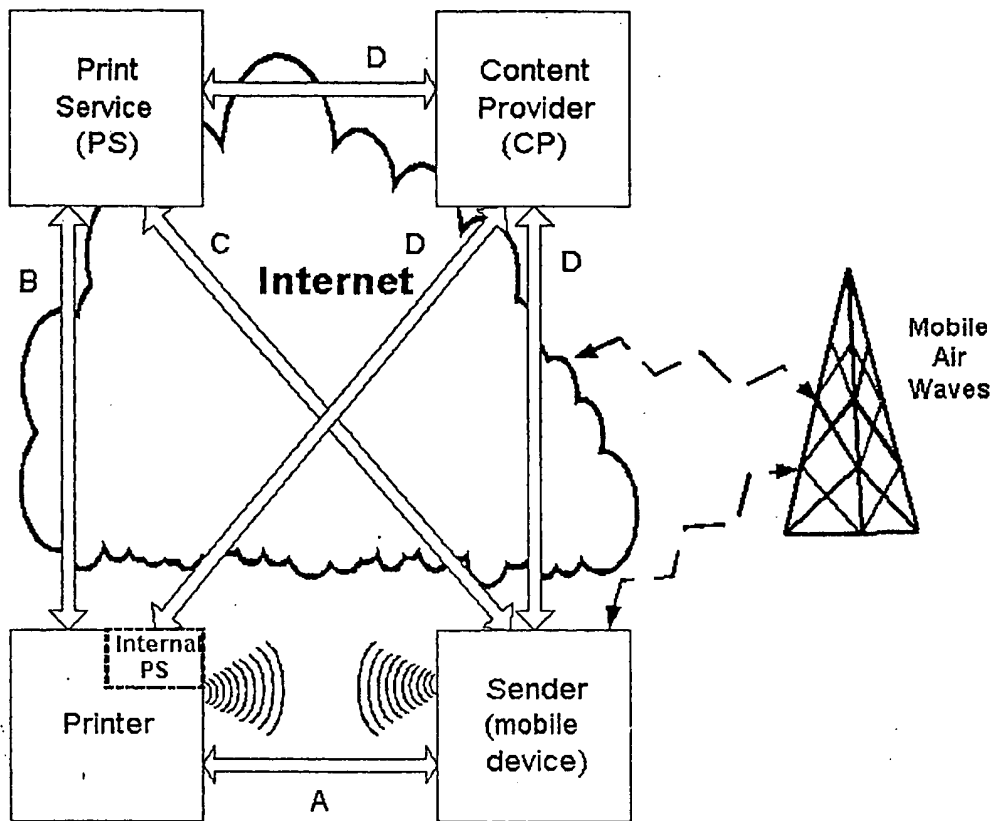
Figure 1: Example Print by Reference System Architecture

Key Interfaces

Print Service Interface (B)

The Printer to Print Service Interface (B), which is called the Print Service Interface in this document, is used by the Printer to communicate with a Print Service. The Print Service supports the functionality required to process the reference on behalf of the Printer. The core functionality of the Print Service includes; job control, accessing the information source and translation of information source to a form that can be used for printing. The Print Service (or parts of it) may be embedded in certain Printer implementations. The Print Service Interface is required to support the deployment of multi-vendor Print Services that are independent of the Printer type used.

Mobile Device to Print Service Interface (C)

This interface is used by the mobile device to access a remote Print Service directly. In terms of functionality this interface is similar to (B). This interface is not restricted to mobile devices. Any device or e-service may use the C interface invoke a Print by reference operation. To support general web access to the Print Service by a user, a

pure web based presentation interface [I] should be supported. The web interface can be used by those devices that support the use of web based mark up information, like HTML or WML, to display a user interface.

Content Provider Interface (D)

This interface is used by the Print Service to access content. This interface is implemented as a standard web based HTTP or HTTPS access. Devices that support WAP will use standard gateways to access the services as those running over HTTP(S). The implementation and features provided by a content provider are outside of the scope of this document although recommendations to support certain security modes are made within this document.

In addition to standard web acess we could support a web base imaging API or other indutry standard rich content API like HailStormMyDocuments.

Other Uses

Although tailored for supporting a PBR use model the PS can be used in other valuable ways.

PS invoked by the printer when the printer receives a print job directly in a format it does not support

Information services, like customized newspapers, can use PSs to handle the complexity of distributing and converting the information into an acceptable form for each Target printer.

The PS is useful whenever a solution distributing information needs t o get the info in a form acceptable to the printer. If you need a driver just use the PS (not necessarily windows drivers)

Print Service Use Models

A Print Service must be able to support a number of use models in order to serve the needs of a diverse set of clients. This section describes some possible use models, along with more detailed information about the nature of the Sender, Printer, and Print

Service interfaces required to support the use model. This should not be considered a complete list[1].

The following table is part of the Bluetooth Print By Reference Marketing requirements document. It is included to illustrate the interactions with the Print Service Interface.

Use Model	Description	Reference Processed by	Pull/ Streaming	Interface	Priority Rating
1	Printer can consume format of reference target without a PS	Printer	Printer pulls content directly from Internet	A - Reference D - Print Data	2
2	Printer needs PS to print reference target	Printer	Printer pulls content via PS	A - Reference B - PS control and print data D - Content	1
3	Streaming of printer consumable data from CP to printer through appliance using BPP	Appliance	Appliance streams data over cellular network to printer	A – Print Data D - Print data	4
4	Streaming of print data from PS through appliance to printer using BPP	Appliance	Appliance streams data over cellular network to printer	A - Print data C - PS control and print data D - Content	3

The use models in the following sections focus on the reference and the data flow. The specification of the Print Service Interface shall also consider discovery, device capabilities, job control and status.

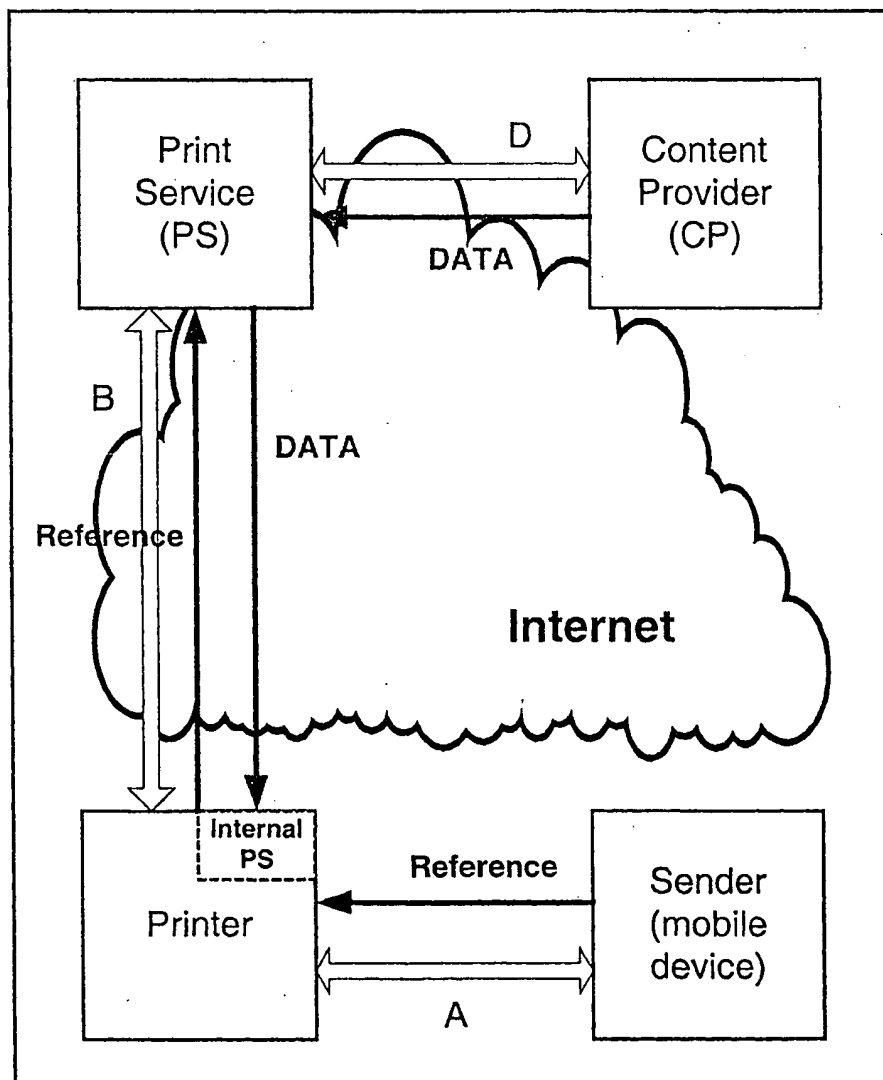## Use Model 1

Printer can consume format of reference target without a PS. Interaction starts with the transfer of a reference from the Sender to the printer via the Bluetooth Print By Reference protocol (A). The reference refers to some information source in the network. A Print Service is not required to process the data. The printer can retrieve the data directly from the content provider.
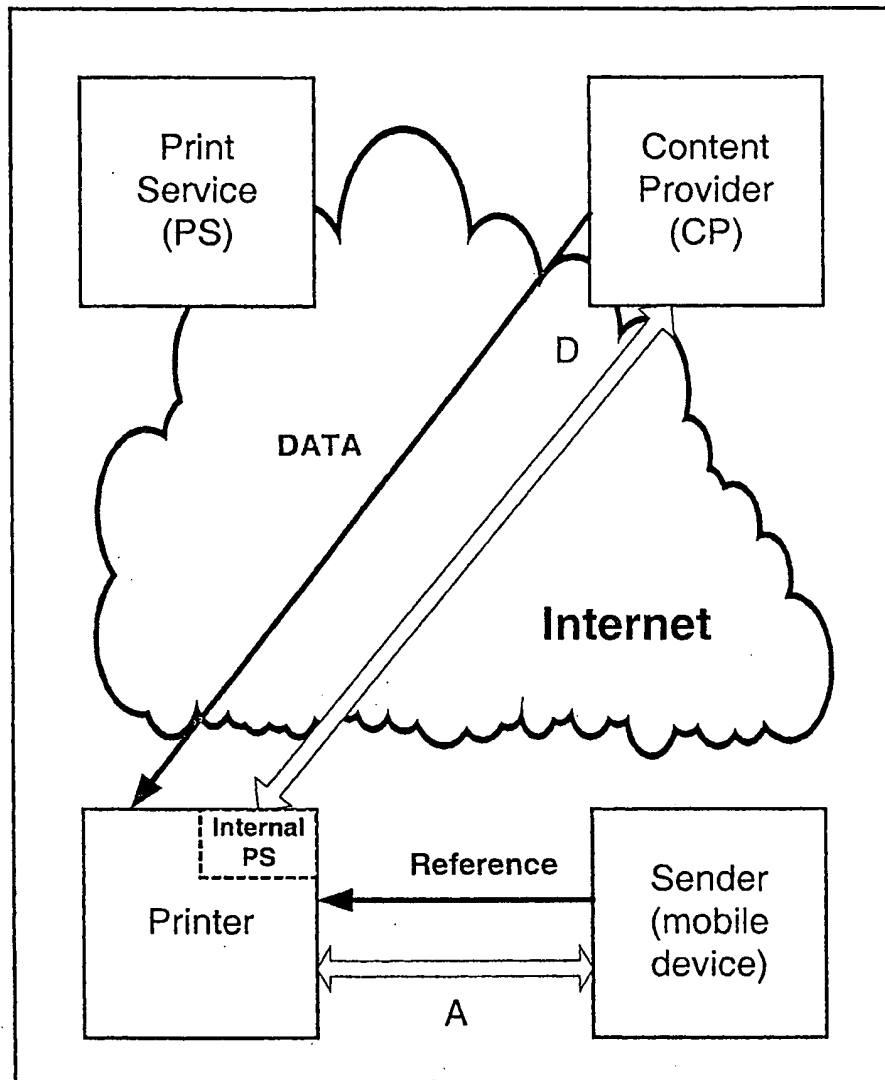
Use Model 2

Printer needs PS to print reference target. Interaction starts with the transfer of a reference from the Sender to the printer via the Bluetooth Print By Reference protocol (A). The reference refers to some information source in the network. The reference will specify the address of the Print Service to use as well as other information relating to the access of the reference. Information on the reference formats used in Bluetooth Print By Reference can be found in Section 10.4 of [BPP]. The printer then uses the Print Service Interface to process the reference information before printing can commence (B). The Print Service must acquire information about the capabilities of the printer in order to process the request. This information or the means to obtain it is sent as part of the print request over the B interface. The Printer retrieves the converted data using the

B interface.

Use Model 3

Streaming of printer consumable data from CP to printer through appliance using BPP. This use model is not illustrated since the Print Service Interface is not required.

Use Model 4 (capabilities communication arrow?)

Streaming of print data from PS through appliance to printer using BPP. The sender sends the reference information to the Print Service using interface C. The Print Service retrieves the data using interface D. The Print Service must acquire information about the capabilities of the printer in order to process the request. This information or the means to obtain it is sent as part of the print request over the C interface. The Sender retrieves the converted data using the C interface. The print job is sent to the printer using the A interface.

Print Service Interface Requirements

This section describes the general requirements of a Print Service Interface. These requirements will be based on the use models defined above along with the issues of Discovery, Print Job Control, Security and Billing.

Both PUSH and PULL data transport models are required to cross fire walls.

Information Flow Requirements

The use models defined above can be supported with the following general requirements for the flow of information between the Printer or the Sender and the Print Service Interface

1. The Print Service must support the ability for a client (Printer or Sender) to upload information (PUSH) to the Print Service for Processing .

2. The Print Service must support the ability for a client to send it a reference as defined in section 10.4 of [BPP].

3. The Print Service can make printer ready information available by returning a URL to the information that can be downloaded (PULLED) by the client.

4. The Print Service can make printer ready information available by downloading (PUSHING) the information to the printer .

5. The Print Service can optionally support a web interface, which can be used by suitably enabled clients to access a web based print service (.

6. The Print Service can optionally support a Reflected UI, which can be used to request information from the user when a reflected UI interaction is possible .

Discovery Requirements

A Print Service needs to be discovered or located before it can be used. There are a number of discovery models that can be used. A particular implementation or printing solution will make specific choices on how discovery should be done. The following provides a selection of options available. This should not be considered a complete list.

1. **Pre-configured**: The location of a Print Service may be pre-configured into a Printer or Sender via a configuration interface.

2. **Service Registry:** The Print Service can be registered into a service registry. Printers and Senders can use the registry to locate a Print Service based on some set of search constraints. Registry infrastructures such as UDDI can be utilized for this purpose. The scope and use of a registry is outside the scope of this document. Propose that UDDI is used for service discovery.

3. **Local Network Discovery:** A Print Service can be located via network discovery protocols. There are a number of protocols defined for IP based networks including SLP and SSDP. SSDP is used by UPNP based devices.

4. **Reference Based Location:** A Printer can discover which Print Service to use by processing a reference sent to it from a Sender. The XML Reference encoding defined in the Bluetooth Basic Print Profile (section 10.4 of BPP) supports the specification of a Print Service URL (the use_service attribute) in the reference.

Print Job Control

The Print Service must provide the means for a Printer or Sender to control, monitor and cancel a Print operation. This leads to the notion of a Print Job and requires an identification scheme (Job Identifier) to distinguish one print operation from another.

When a Printer or Sender initiates a Print request it must have the option of setting attributes that determine the outcome of the Print operation. The Print Service Interface must support a standard set of print options supported by all Print Services. Extensions to this set must also be supported to allow for evolution and support of differentiated vertical markets. The initiation of a Print operation will result in the creation of a Print Job and an associated Job Identifier. All subsequent Print control operations will require a Job Identifier to link operations to a particular Print Job. If the Printing Service supports RUI the Print Service can include the job identifier as the state variable that the sender or printer returns as a result of selecting a hyperlink included in the RUI web markup.

A Print Service must have some understanding of the capabilities of the Particular Printer (and it's configuration) in order to provide print ready information. The Print Service Interface must provide the means for this information to be obtained before the processing of a Print request can begin.

Once a Print Job is underway the Printer or Sender must be able to query the status of the Print Job or to Cancel the Print Job.

Security

A Print Service may need to protect itself from unauthorized use. To support this need the Print Service Interface must provide a mechanism for the Print Service to discover the identity of the client device (Printer or Sender) in order to enforce access control.

When processing a reference a Print Service may be challenged to provide credentials in order to access the information to be printed. The Print Service may obtain access credentials in the following ways:

1. Access credentials may be included in the reference as described in the Bluetooth Basic Print Profile (section 10.4).

2. The Print Service may pass the challenge back to the client who must then re-submit the request with the correct security information included. The reflect UI mechanism is used to deliver the challenge to the Sender.

3. A Print Service may optionally support privacy through the encryption of the information that travels across the B and C interfaces. This encryption can be imposed at the link level (e.g. HTTPS, IPSec) and established at connection set-up. Since this level of security occurs at the link level it has no bearing on the functionality of the Interface. Another approach is to have the information encrypted above the link level. The XML Reference encoding defined in the Bluetooth Basic Print Profile (section 10.4) supports the specification of a decryption key (the key ??? attribute) in the reference.

Billing

Billing is a complex issue and one that cannot be fully addressed in this document. The Reflected UI and Web based access models provide a convenient mechanism to support billing. This is because they interface with the user and as such offer flexibility in providing an interface into a particular billing model.

There are no standard or widely used billing models that can be recommended at this time for use by a standard Print Service Interface. Defining a billing interface just for Printing would not satisfy the needs of users who may interact with many services. Therefore billing outside of the web access model is considered to occur out of band from the Print Service Interface. The notion of an opaque billing identifier is supported to allow for reference to the out of band billing transaction to be referenced during a Print operation. The XML Reference encoding defined in the Bluetooth Basic Print Profile (section 10.4) supports the specification of a billing code (the ??? attribute) in the reference.

Functional Overview

The section provides a functional overview of the Print Service Interface and describes the operations provided by the interface. The following section go into more detail and provide a specification of the interface. Figure 2 shows the communication architecture for the Print Service Interface.
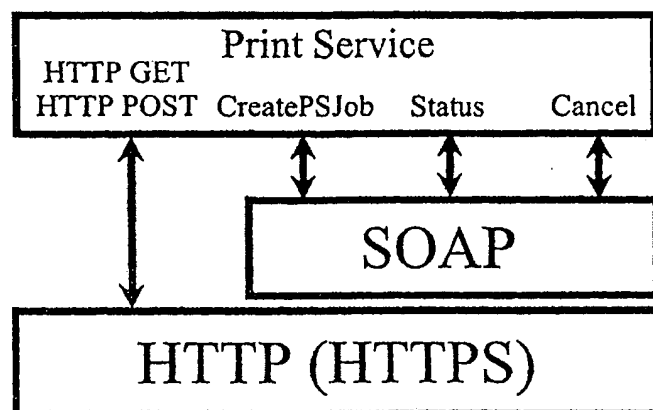
```
┌─────────────────────────────────────────────┐
│                 Print Service                │
│  HTTP GET                                    │
│  HTTP POST   CreatePSJob    Status    Cancel │
└─────────────────────────────────────────────┘
        ↕         ↕           ↕          ↕
                ┌──────────────────────────────┐
                │            SOAP              │
                └──────────────────────────────┘
        ↕
┌─────────────────────────────────────────────┐
│              HTTP (HTTPS)                     │
└─────────────────────────────────────────────┘
```

Figure 2 Print Service Protocols

The Print Service Interface is layered on top of HTTP (HTTPS for secure access). HTTP is used because it provides an efficient and ubiquitous transport mechanism. The Print Service Interface also uses SOAP, the Simple Object Access Protocol. SOAP is used to define three actions that are exported by the Print Service. These actions along with generic HTTP access (HTTP GET and POST) support the requirements for the Print Service. The SOAP actions are described in more detail below and are specified in the section XX.

Data Types and Structures

This section defines format and acceptable values of the major data types and structures used in the SOAP actions of the Print Service Interface.

Reference

The XML specification for a Reference is defined in the Bluetooth Basic Print Profile, section 10.4.2. This specification supports the representation of a network reference plus Meta information required to access that information including:

- Security credentials

- Cookies

- Access proxies

A reference must include a URI which can be used to access the information, all other information is optional.

PSI:Tuple

A Tuple is a structure that represents a name/value pair. The value is polymorphic accessor as defined in section 5.3 of the SOAP specification. This allows the type of the value to be specified at runtime via the xsi:type attribute, defined in section 2.6.1 of the XML Schema Part 1.

Here are some examples of PSI:Tuples for a float and string value

```
<PSI:Tuple>
        <Name>Width</Name>
        <Value xsi:type="xsd:float">4.67</Value>
</PSI:Tuple>

<PSI:Tuple>
        <Name>Description</Name>
        <Value xsi:type="xsd:string">Grommit for a mustard mill</Value>
</PSI:Tuple>
```

The schema for this type is defined as follows

```
<element name="Tuple" type="PSI:Tuple"/>
<complexType name="Tuple">
        <sequence minOccurs="1" maxOccurs="1">
                <element name="Name" type="xsd:string/>
                <element name="Value"/>
        </sequence>
</complexType>
```

PSI:JobOptions

JobOptions is an array of PSI:Tuples that can be used to support the specification of arbitrary options for a Print Job. These Job Options are extensions to the standard options supported as arguments to the CreatePSJob action defined below. Print vendors and consortiums that wish to specify extended job options are strongly advised to used XML namespaces to avoid option name clashes for their extended JobOptions.

The XML Schema for PSI:JobOptions is defined as follows

```
<element name="JobOptions" type= ="SOAP-ENC:Array"/>
```

The following shows an example of a PSI:JobOption

```
<PSI:JobOptions SOAP-ENC:arrayType="PSI:Tuple[2]>
        <PSI:Tuple>
                <Name>Width</Name>
                <Value xsi:type="xsd:float">4.69</Value>
        </PSI:Tuple>
        <PSI:Tuple>
                <Name>Description</Name>
```

```
                    <Value xsi:type="xsd:string">Big Grommit</Value>
          </PSI:Tuple>
</PSI:JobOptions>
```
<u>PSI:Capabilities</u>

This is an array of PSI:Tuples that can be used to specify a list of arbitrary printer capabilities. This allows a printer to pass device information to a cooperating Print Service to aid with the process of rendering print ready information.

The XML Schema for PSI:Capabilities is:

```
<element name="Capabilities" type="="SOAP-ENC:Array"/>
```

CreatePSJob

A Printer or Sender initiates a print job using CreatePSJob action. This action provides the Print Service all of the information required to create a print job and to begin the processing of a print operation. The Print service must create a unique Job Identifier (*JobID*) that can be used in subsequent operations to identify the print Job. CreatePSJob supports both print by reference and information upload as a means of providing content to the Print Service. If the client is printing a reference then this is sent the *Reference* argument of action. If the client plans to upload information to the print service it does not specify a Reference argument in the action request. When the client indicates that it wants to upload the information to be printed the Print Service must include a *DataSink* URL in the CreatePSJob response. The client must then send the information to the Print Service using a separate HTTP POST operation to the *DataSink* URL. The Print Service also returns the *JobID* and a *PrintSrc* URL to client. The PrintSrc URL is used to retrieve the Print ready information once the Print Service has processed the original information.

The following arguments and results exchanged during a CreatePSJob action. The omission of any IN argument will default to a value defined by the Print Service.

Type	Argument name	Direction	Support in Client	Support in Print Service
String	JobName	IN	O	M
	Description: The user-friendly name of the specified job.			
String	JobOriginatingUserName	IN	O	M
	Description: The name of the user that submitted the specified job. Either supplied by the client or by the security infrastructure, if any.			
String	DocumentFormat	IN	O	M
	Description: Specifies the document format of the current job as a mime media type and any applicable version.			

	Copies		N	O	M
	Description: Specifies the number of copies of the current job to be printed.				
String	Sides		N	O	M
	Description: Specifies how pages are to be imposed upon the sides of a selected medium for the current job. Values: one-sided two-sided-long-edge two-sided-short-edge				
14	NumberUp		N	O	M
	Description: Indicates the number of print-stream pages to impose upon a single side of an instance of a selected medium for the current job. Examples: 1 = One page per side. 2 = Two pages per side. 4 = Four pages per side.				
String	OrientationRequested		N	O	M
	Description: Indicates the desired orientation for printed pages of the current job. Values: Portrait Landscape ReverseLandscape ReversePortrait				
String	MediaSize		N	O	M
	Description: Identifies the size of medium to be used for the current job. Refer to section **Error! Reference source not found.** for a list of Media Sizes.				
String	PrintQuality		N	O	M
	Description: Specifies the print quality requested for the current job. Values: Draft Normal High Note: Because of the vendor dependencies in print quality metrics (DPI etc.); print quality descriptions are kept intentionally generic.				
String	MediaType		N	O	M

			IN	O	O
		Description: Identifies the type of medium to be used for the current job. Refer to section **Error! Reference source not found.** for a list of Media Types.			
PSIJobOptions	ExtendedJobOptions		IN	O	O
		Description: Array of extended options to be applied to the print Job. This provides an extension to the standard Job control arguments.			
Reference	Reference		IN	O	M
		Description: Used to pass reference information to the Print Service. The reference includes information to resolve to a piece of information on the network. If a reference is not supplied then the Print Service assumes that the client will upload the information to be printed via the DataSink URL			
String	PrinterID		IN	O	O
		Description: IEEE 1284-2000 Device ID			
PSICapabilities	PrinterCapabilities		IN	O	O
		Description: An array of printer capabilities that can be used by the print service to process the request. The client may supply this information however the printer may not be able to interpret the information without prior knowledge of semantics			
4	BillingID		IN	O	O
		Description: Opaque identifier for billing system obtained out of band.			
4	JobID		OUT	M	M
		Description: Unique Job Identifier created by the print service for this print request. The Job Identifier must be used on subsequent requests that refer to this Job			
String	DataSink		OUT	O	M
		Description: URL to be used by the client to upload data to the service via a HTTP POST.			

in = Printer → PS

out = PS → Printer

String	PrintSrc			OUT	M		M
Description: URL to be used by the client to download (retrieve) the Print ready information from the Print service using HTTP GET.							

Table 1 CreatePSJob Action Information

Status

The Status action is used to inquire on the current status of a print job. The status requires that the client have a valid JobID obtained from a previous CreatePSJob action. The Print Service can provide three pieces of information in response to a Status action request:

- A mandatory Integer status identifier indicating the status of the print job according to the values in Table 3.

- An optional textual status message that can be displayed on a front panel or other user interface.

- An optional progress indicator describing the completion percentage of the print job.

The following table lists the SOAP arguments and responses for a status request

Type	Argument name		Direction	Support in Client	Support in Print Service
I4	JobID		IN	M	M
Description: Unique Job Identifier created by the print service for this print request.					
I4	StatusID		OUT	M	M
Description: Integer indicating the current status of the operation. Valid status codes are listed in Table 3					
String	StatusMessage		OUT	O	O
Description: Textual message describing the current status of the Print request.					
I4	CompletionPercentage		OUT	O	O

Description: Number between 0 and 100 that provides an estimate of the completion status of the Print job.

Table 2 Status SOAP Action Information

The following Table lists the valid Integer status codes for this action

Status Code	Reason
0x00	Processing completed Print document ready for download
0x01	Working
0x02	Accessing content
0x03	Translating content
	[Think of any more? add them here]

Table 3 Status Codes

Cancel

The Cancel action is used to cancel a Print request immediately. This will inform the Print Service that it may stop processing a request and reclaim any resources it may have allocated. This action must provide a valid JobId obtained from a previous CreatePSJob request.

The following table lists the SOAP arguments used in this action

Type	Argument name	Direction	Support in Client	Support in Print Service
4	JobID	IN	M	M
	Description: Unique Job Identifier created by the print service for this print request.			

Operational Overview

This section will discuss the operation and use of the Print Service Interface. There are two main uses of the Interface. The first use supports a print by reference model where a print service client sends a reference to the Print service. The second use is used when the content is uploaded from the print service client.

Reference Printing

The following table shows an example of an interaction between a Print service client (Printer, mobile device, e-service) and a Print Service.

Client	Print Service
Client starts Print job by sending a CreatePSJob action	CreatePSJob →

```
POST /PrintService HTTP/1.1
Host: www.printersrus.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: [TBD]

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:CreatePSJob
          xmlns:PSI="URI-TBD">
             <PrintName>PrintThis</PrintNamel>
             <Reference url="www.content.com/foo.htm" cookie="
CUSTOMER=WILE_E_COYOTE", On401=" Basic QWxhZGRpbjpvcGVuIHN1c2FtZQ==" />
             <Copies>2</Copies>
             <PrinterID>XXXYYYZZ</PrinterID>
        </PSI:CreatePSJob>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

	Print Service receives request. Determines this a Print by reference Job (because a Reference argument exists). The Print Service allocates a JobID and creates a PrintSrc URL. Sends a response to the client and starts to process the
	← CreatePSJob Response

		request. Printer information is obtained from the PrinterID specified
| | ```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:CreatePSJobResponse xmlns:PSI="URI-TBD">
            <JobID>567832</JobID>

<PrintSrc>http://www.printersrus.com/printengine?PrintJob=567832</Print
Src>
        </PSI:CreatePSJobResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
``` | |
Client tries to access the print data using a HTTP Get on the PrintSrc url	GET /printengine?PrintJob=567832 HTTP 1.1	
	HTTP/1.1 202 OK	Print Service is still processing the Print job so it returns a HTTP 202 (Accepted) status code. See section 10.2.3 of RFC 2616
Client waits before re-trying the request a second time	GET /printengine?PrintJob=567832 HTTP 1.1	
	HTTP 1.1 200 OK Content-Length=nnn Content-Type=xxx [Content information]	Print Service has completed processing the reference and responds to the GET request with the data
Client processes information		
		Print Service will cache the Job information

— Syntax (handwritten annotation)

	including the Printable data for a time period determined by the Print Service implementation before deletion.

The interaction shown above described the printing of a reference. The reference was included in the initial CreatePSJob request. In this example CreatePSJob was the only SOAP action used. The next example will demonstrate content upload and the use of the Status action.

Content Upload

The following table shows a printing example utilizing a content upload from the client to the Print Service.

Client	Print Service
Client starts Print job by sending a CreatePSJob action	CreatePSJob →

```
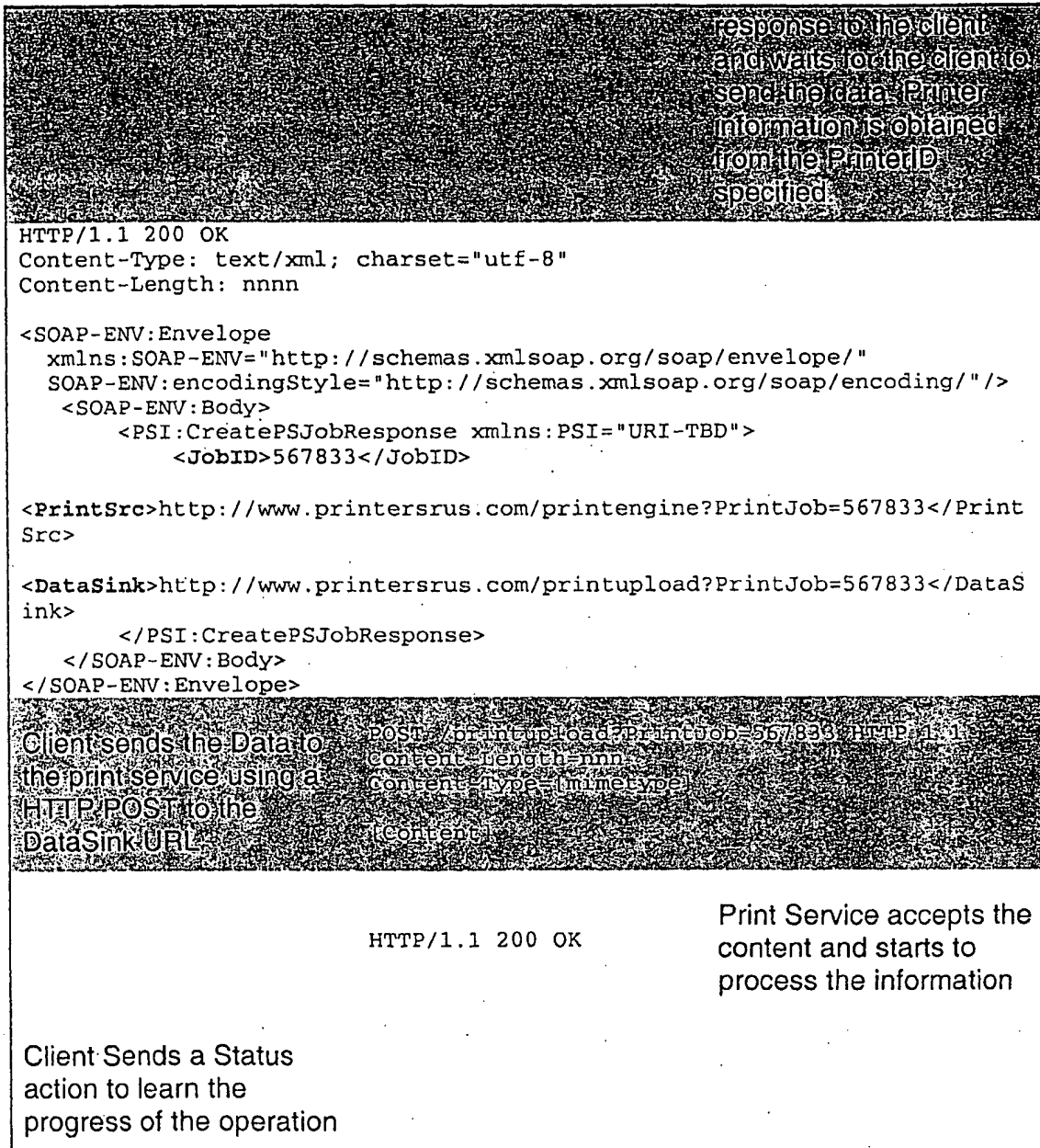POST /PrintService HTTP/1.1
Host: www.printersrus.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: [TBD]

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:CreatePSJob
          xmlns:PSI="URI-TBD">
            <PrintName>PrintThis</PrintName>
            <Copies>2</Copies>
            <PrinterID>XXXYYYZZ</PrinterID>
        </PSI:CreatePSJob>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

| | ← CreatePSJob Response | Print Service receives request. Determines that the client needs to upload the content. The Print Service allocates a JobID and creates a PrintSrc URL and a DataSink URL. Sends a |

response to the client
and waits for the client to
send the data. Printer
information is obtained
from the PrinterID
specified.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<SOAP-ENV:Envelope
   xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
   SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:CreatePSJobResponse xmlns:PSI="URI-TBD">
            <JobID>567833</JobID>

<PrintSrc>http://www.printersrus.com/printengine?PrintJob=567833</Print
Src>

<DataSink>http://www.printersrus.com/printupload?PrintJob=567833</DataS
ink>
        </PSI:CreatePSJobResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Client sends the Data to
the print service using a
HTTP POST to the
DataSink URL

```
POST /printupload?PrintJob=567833 HTTP/1.1
Content-Length=nnn
Content-Type=(mimetype)

(Content)
```

HTTP/1.1 200 OK

Print Service accepts the
content and starts to
process the information

Client Sends a Status
action to learn the
progress of the operation

```
POST /PrintService HTTP/1.1
Host: www.printersrus.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: [TBD]

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:Status
           xmlns:PSI="URI-TBD">
              <JobID>567833</JobID>
        </PSI:Status>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Printer has completed processing and sends an Appropriate Response to the Status action

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
    <SOAP-ENV:Body>
        <PSI:StatusResponse xmlns:PSI="URI-TBD">
            <StatusID>0x00</StatusID>
            <StatusMessage>Ready</StatusMessage>
            <CompletionPercentage>100</CompletionPercentage>
        </PSI:StatusResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Client uses a HTTP GET to the PrintURL to obtain the Print data

```
GET /printengine?PrintJob=567833 HTTP 1.1
```

```
HTTP 1.1 200 OK
Content-Length=nnn
Content-Type=xxx

[Content information]
```

Print Service has completed processing the reference and responds to the GET request with the data

Client processes information

Print Service will cache the Job information

	including the Printable data for a time period determined by the Print Service implementation before deletion.

The example above shows the use of content upload and the Status action. The Status action can be used to provide more detailed feedback on the progress of a Print Service operation.

Cancelling a Print Job

This example shows the use of the Cancel action to stop a Print Operations

Client	Print Service
Client starts Print Job by sending a CreatePSJob action	CreatePSJob →

```
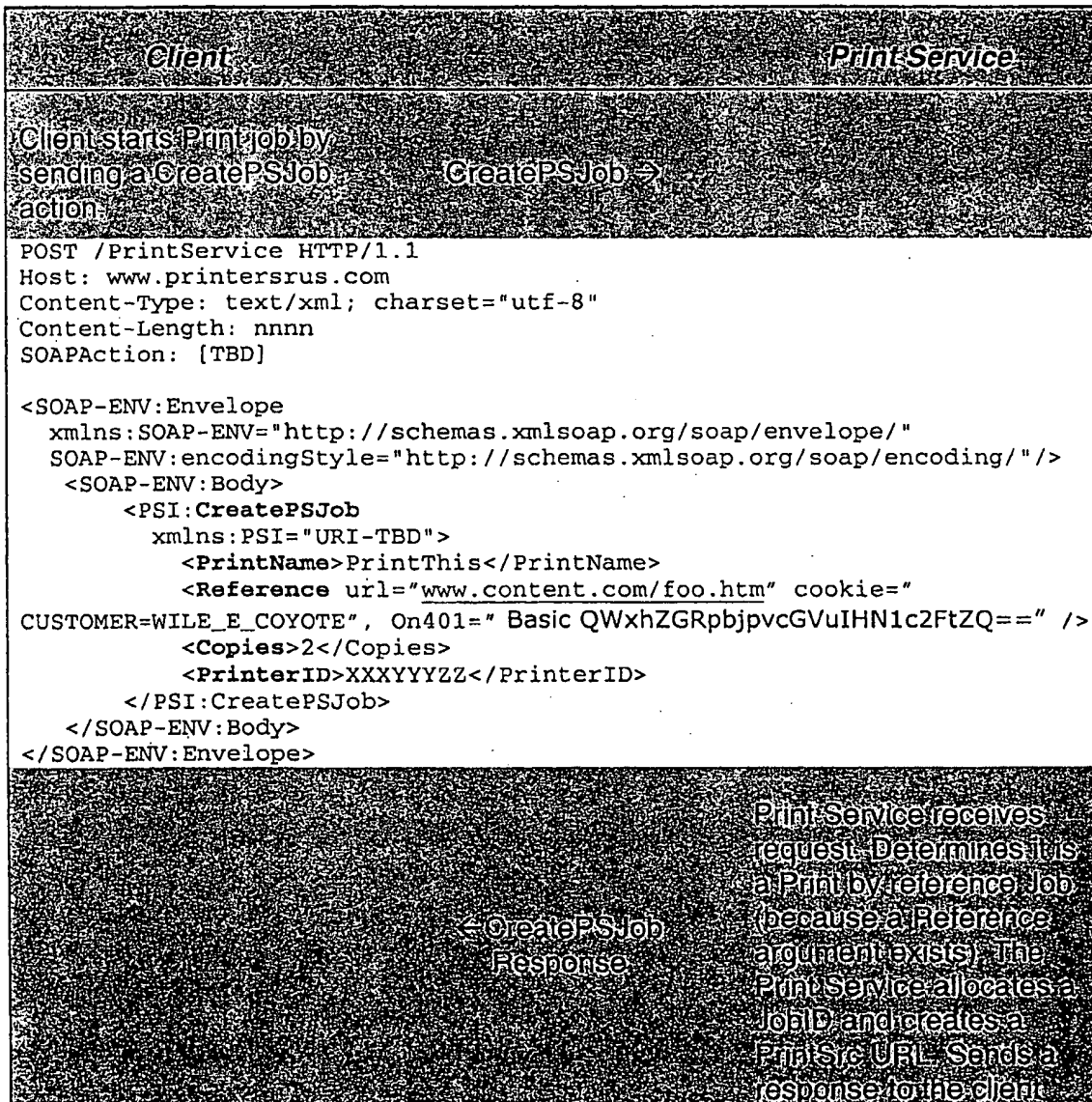POST /PrintService HTTP/1.1
Host: www.printersrus.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: [TBD]

<SOAP-ENV:Envelope
   xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
   SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
   <SOAP-ENV:Body>
       <PSI:CreatePSJob
         xmlns:PSI="URI-TBD">
            <PrintName>PrintThis</PrintName>
            <Reference url="www.content.com/foo.htm" cookie="
CUSTOMER=WILE_E_COYOTE", On401=" Basic QWxhZGRpbjpvcGVuIHN1c2FtZQ==" />
            <Copies>2</Copies>
            <PrinterID>XXXYYYZZ</PrinterID>
       </PSI:CreatePSJob>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

← CreatePSJob Response	Print Service receives request. Determines it is a Print by reference Job (because a Reference argument exists). The Print Service allocates a JobID and creates a PrintSrc URL. Sends a response to the client

and starts to process the
request. Printer
information is obtained
from the PrinterID
specified.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:CreatePSJobResponse xmlns:PSI="URI-TBD">
            <JobID>567834</JobID>

<PrintSrc>http://www.printersrus.com/printengine?PrintJob=567832</Print
Src>
        </PSI:CreatePSJobResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Client cancels the Print
Job using the Cancel
action

```
POST /PrintService HTTP/1.1
Host: www.printersrus.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: [TBD]

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
    <SOAP-ENV:Body>
        <PSI:Cancel
          xmlns:PSI="URI-TBD">
            <JobID>567834</JobID>
        </PSI:Cancel>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Printer receives cancel
and stops processing the
Job. The printer reclaims
all resources associated
with the Job. Sends a
Response back to the
client.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<SOAP-ENV:Envelope
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"/>
   <SOAP-ENV:Body>
       <PSI:CancelResponse xmlns:PSI="URI-TBD"/>
   </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

FW Bluetooth Print by Reference; HP 10016066-67; GBC 65483 et al.
From: MASON,DAVE (HP-Cupertino,ex1)
Sent: Wednesday, May 16, 2001 5:33 PM
TO: BERKEMA,ALAN C (HP-Roseville,ex1)
Subject: FW: Bluetooth Print by Reference; HP 10016066-67; GBC 65483 et
al.

Hi Alan,
for future reference, please find below a list of titles and associated HP ID
numbers for patent applications that will filed by Steve Fallon of Greer, Burns &
Crane as soon as possible. As you know, these patent applications are all based on
the original invention disclosures entitled "Print by Reference" (10016066) and
"Printer Service Interface" (10016067).

Thanks,
David

1. PORTABLE WIRELESS DEVICE AND PRINT DEVICE PRINT BY REFERENCE PROTOCOL
(10016066-1)

2. PRINT SERVICE AND PRINT DEVICE PROTOCOL SUPPORTING PORTABLE WIRELESS DEVICE
PRINTING BY REFERENCE (10016067-1)

3. PRINT BY REFERENCE METHOD FOR PORTABLE WIRELESS DEVICES (10016783-1)

4. PORTABLE WIRELESS DEVICE AND DEVICE SOFTWARE FOR PRINTING BY REFERENCE
(10016784-1)

5. PRINTING DEVICES AND DEVICE SOFTWARE FOR SUPPORTING PORTABLE WIRELESS DEVICE
PRINTING BY REFERENCE   (10016785-1)

6. PRINT SERVICE AND METHOD FOR PORTABLE WIRELESS DEVICE PRINTING BY REFERENCE
(10016786-1)

7. PRINT BY REFERENCE COMMUNICATION METHODS FOR PORTABLE WIRELESS DEVICE PRINTING
(10016787-1)

EXHIBIT C

Hewlett-Packard Company
19111 Pruneridge Avenue
Mail Stop 44L18
Cupertino, CA 95014-0795
www.hp.com

David M. Mason
Senior Patent Agent
IP Section, Legal Department

408.447.4046 Tel
408.447.0854 Fax
dave_mason@hp.com

May 17, 2001

5/17/01

Mr. Roger D. Greer
Greer, Burns & Crain Ltd.
300 S. Wacker Drive
25th Floor
Chicago, IL 60606

RE: Request for Quote
     HP PDNO: 10016784-1
     Title: Portable Wireless Device and Device Software for Printing
         by Reference
     Inventor(s): Alan C. Berkema

Dear Roger:

Please give us a quote of the cost to perform the services indicated on the attached *Request For Quote And Engagement Letter Agreement* (hereinafter "RFQ") form, for the above-identified matter, pursuant to Outside Counsel Procedures revised October 15, 1999, a copy of which you have received and reviewed. The quote should be based on your preparing and providing the requested services by the date for receipt by HP and/or the USPTO as indicated.

Your quote should be submitted on the enclosed RFQ form. If we accept your quote, we will return a fully executed copy of the Agreement to you for your records. **The Agreement will not be binding on you or on HP until signed by HP's authorized representatives.**

If the Agreement is not signed and returned to HP, any bills submitted by you cannot be paid.

Thank you for your assistance. If performing these services might involve a possible conflict of interest for your firm, you should advise us within one week of receipt of this letter.

Sincerely,

David M. Mason
Senior Patent Agent

DMM/tf

Enclosure(s)

~~~~~~~ ~~~~~ ~~~ Engagement Letter Agreement

RE: Hewlett-Packard Docket No. 10016784

EXHIBIT D

USSN:

X This is a request for a quote for the following services:

___ This is a confirmation of your quote for the following services:

PREPARE

X Application   **X** File with USPTO

___ Response   ___ Return to HP for filing

___ Other _____

X YOUR FINISHED PRODUCT TO HP SHOULD INCLUDE ALL ITEMS ON THE ENCLOSED CHECKLIST.

HP REQUIRED DATES: _____ Date for Receipt by HP

6/30/01 ~~ASAP~~ Date to be Filed in PTO

HP Attorneys of Record: (to be included on the Declaration)

Customer Number | 022879 |

HP Primary Technical Contact: Alan C. Berkema, M/S 5558

Telephone No.: (916) 785-5605   FAX No.:

HP Entity: IIPS

Address: 8000 Foothills Blvd.
              Roseville, CA 95747-5731

ADDITIONAL TERMS OR INSTRUCTIONS:

Your finished product to HP should include the attached CHECKLIST with all Items included in the final package checked off except those marked "NA".

TOTAL PRICE: ___███████████___ (including Formal drawings)

I agree to the terms of this Agreement including the additional terms above, pursuant to the HP Procedures for Outside Counsel revised **OCTOBER 15, 1999** a copy of which I have received and reviewed. This Agreement will not be binding on either party until signed by an authorized representative of HP.

GREER, BURNS & CRAIN LTD.   **HEWLETT-PACKARD COMPANY**

By: _____   By: _____
    Roger D. Greer   David M. Mason

Dated: ____5/21/01____   Dated: ___5/22/01___

Rev 10/00 (BLA)

steve list1
From: Steven P. Fallon [sfallon@gbclaw.net]
Sent: Friday, June 22, 2001 1:01 PM
To: 'BERKEMA,ALAN C (HP-Roseville,ex1)'; Jeff Morgan (E-mail)
Cc: 'Roger Greer (E-mail)'; 'MASON,DAVE (HP-Cupertino,ex1)'
Subject: HP 10016067-1; GBC 65542; Print By Reference Service Protocol

Alan and Jeff,

This is the first draft of the print service protocol application. It
shares much with the print service method application, so the read should be
easy. The new material to the specification is associated with the tables.
The FIGS are from the Service Method application, but are re-attached for
convenience. The claims are all new.

We need to work hard to get all applications ready for filing next week.
You have second drafts for most of the applications. You have this new one
from me, and one following later today from Kim Jacklin for the PDA.

Here is the list of applications:

1.   PORTABLE WIRELESS DEVICE AND PRINT DEVICE PRINT BY REFERENCE PROTOCOL
(10016066-1) Steve
2.   PRINT SERVICE AND PRINT DEVICE PROTOCOL SUPPORTING PORTABLE WIRELESS
DEVICE PRINTING BY REFERENCE (10016067-1) Steve
3.   PRINT BY REFERENCE METHOD FOR PORTABLE WIRELESS DEVICES (10016783-1) Kim
4.   PORTABLE WIRELESS DEVICE AND DEVICE SOFTWARE FOR PRINTING BY REFERENCE
(10016784-1) Kim
5.   PRINTING DEVICES AND DEVICE SOFTWARE FOR SUPPORTING PORTABLE WIRELESS
DEVICE PRINTING BY REFERENCE   (10016785-1) Tom
6.   PRINT SERVICE AND METHOD FOR PORTABLE WIRELESS DEVICE PRINTING BY
REFERENCE (10016786-1) Steve

7.   PRINT BY REFERENCE COMMUNICATION METHODS FOR PORTABLE WIRELESS DEVICE
PRINTING (10016787-1) Tom

I hope we can talk on Monday to make sure that we are getting finished.

Best Regards,
Steve

Steven P. Fallon
Greer, Burns & Crain, Ltd
300 S. Wacker Drive
25th Floor
Chicago, IL 60606
Ph: (312)360-0080
Fax: (312)360-9315
Email   sfallon@gbclaw.net

 -----Original Message-----
From: Steven P. Fallon [mailto:sfallon@gbclaw.net]
Sent: Thursday, June 14, 2001 4:25 PM

To: 'BERKEMA,ALAN C (HP-Roseville,ex1)'
Cc: 'Roger Greer (E-mail)'; 'MASON,DAVE (HP-Cupertino,ex1)'
Subject: RE: HP 10016786-1; GBC 65546; Print By Reference Service Method

Jeff and Alan,

This is a final draft which takes into account Alan's previous comments
(included below) on an initial draft. I have "tracked" the new material in
word. Please note that FIG. 1 has been modified to account for a bluetooth
or other connection to the print service..
I'm not sure whether Alan will have access to this since he is away, and
look forward to Jeff's comments.
Jeff can call/email or whatever will work best.
Best regards,
Steve

  << File: 10016786.DOC >> << File: FIG1.PPT >> << File: FIG3.PPT >> <<
File: FIG2.PPT >> << File: FIG4.PPT >>

Steven P. Fallon
Greer, Burns & Crain, Ltd
300 S. Wacker Drive
25th Floor
Chicago, IL 60606
Ph: (312)360-0080
Fax: (312)360-9315
Email sfallon@gbclaw.net

  -----Original Message-----
From: BERKEMA,ALAN C (HP-Roseville,ex1) [mailto:alan_berkema@hp.com]
Sent: Friday, June 01, 2001 5:19 PM
To: 'Steven P. Fallon'; BERKEMA,ALAN C (HP-Roseville,ex1)
Cc: Roger Greer (E-mail); MASON,DAVE (HP-Cupertino,ex1)
Subject: RE: HP 10016786-1; GBC 65546; Print By Reference Service Method

  << File: 10016786.doc >>
Steve,

Great start.
I have attached a doc with changes on, that provide
comments and suggestions.

Now a question, In FIG 3 and related text we talk about SOAP.
We also call for SOAP in Claim 8 and 28. While SOAP is today's
preferred implementation I think this could evolve to other web
protocols in the future. Even in the near term it could evolve to
using WSDL (Web Based Description Language) in addition to
or in place of SOAP. See http://www.w3.org/TR/wsdl for more
than you want to know about WSDL. WSDL is sort of new and I
don't know much about it (I need to learn soon...).
I have also asked Jeff Morgan to comment on this question.
Dave any thoughts?

Thanks for all you effort on these disclosures,
Alan

-----Original Message-----
From: Steven P. Fallon [mailto:sfallon@gbclaw.net]
Sent: Wednesday, May 30, 2001 3:25 PM
To: Alan Berkema (E-mail)
Cc: Roger Greer (E-mail); Dave Mason (E-mail)
Subject: HP 10016787-1; GBC 65546; Print By Reference Service Method

Alan,

I'm enclosing a draft of the application for a service method to protect the
print service. The application contemplates software, etc., executing the
method of a remote or local print service for the print by reference. A
separate one will follow for the print service interface, basically directed
to the protocol.

I look forward to your comments.

Best Regards,
Steve

Steven P. Fallon
Greer, Burns & Crain, Ltd
300 S. Wacker Drive
25th Floor
Chicago, IL 60606
Ph: (312)360-0080
Fax: (312)360-9315
Email sfallon@gbclaw.net